# SEMESTER END EXAMINATION APRIL-MAY, 2026

**Course Name: - B TECH (CSE WITH AIDS)**
**Semester:- IV$^{th}$**
**Paper Name: - DATA ANALYTICS & VISUALIZATION**
**Paper Code:- NAD-404**
**Time - 3 Hrs + 20 minutes per hour extra time for V.I. & examinees with writer.** **Max Marks-70**

Instructions:

- The question paper consists of three sections namely A, B, C. All sections are compulsory.
- Section A- Each question carries **3 mark. All questions are compulsory**.
- Section B- Answer any **5 out of 7** given questions. Each question carries **7 marks**.
- Section C- Answer any **2 out of 3** given questions. Each question carries **10 marks**.

## Section - A
## Multiple Choice Questions

**1. Answer all the following questions.** **5x3 =15**

i) Data analytics is the process of___
a) Collecting ,cleaning b) organizing c) examining d) all of the above

ii) Does not repersent visualization?
a) Chart b) Graph c) map & chart d) Raw numbers

iii) Which type of vizualization is best for showing trnds over time?
a) Line chart b) Pie chart c) Heat map d) NDT

iv) Does not data cleaninig tasks?
a) Handling missing value b) removing duplicate c) Handling outliers d) Merging

v) What is the main purpose of association rules in data mining?
a) To find relationship and patterns among items in transaction
b) To classify data into categories
c) To reduce the size of data
d) NDT

## Section – B
## Short Answer Questions

**2. Answer any five of the following questions.** **5x7=35**

i. A) Define data anlytics with neat diagram with example?
B) What are the key element of a good dashboard?

ii. A) What are data visualization models? Explain different types with examples.
B) Explain principle of effective visualization design?

iii. A) Explain multidimentional data and techniques used to visualize it?
B) Explain intraction dynamics in visual analytics systems?

iv. A) Explain network data and graph visualization techniques?
B) Explain techniques used in EDA?

v. A) Exaplain process of data wrangling & cleaning .Why is it critical?
B) Describe automated methods for data collection?

vi. A) Compare APIs.web scraping,and sensors?
b) Explain text analysis techniques used in data analytics?

vii. A) Compare classification and regression
B) Explain text visualization techniques such as word clouds and topic modeling?

## Section – C
## Descriptive Questions

**3. Answer any two of the following question.** **2x10=20**

i) A) Explain the complete data science workflow with a real wrld example? Define data analytics?
B) What is dimensionality reduction? Compare PCA and LDA with use case?

ii) A) Discuss time-series data analysis ? Compare collaborative and content-based filtering?
B) Expalin association analysis and its applications.defin data visualization with example?

iii) Write short notes :
A) Multidiamentional data
B) Visualization design
C) Data Visualization tools
D) Data wrangling

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